

**What is claimed is:**

- 1    1.    A chemical dispensing apparatus<sup>(10)</sup> for use with an air conditioning or heating  
2        system to reduce airborne contaminants from the air stream of a conditioned  
3        space comprising a chemical supply section including a chemical reservoir and<sup>(16)</sup>  
4        a chemical delivery device<sup>(22)</sup> to store and supply chemical to the contaminated  
5        air stream<sup>(14)</sup> and a dispensing control section including a microprocessor control<sup>(18)</sup>  
6        to selectively control the dispensing of chemical to the contaminated air<sup>(36)</sup>  
7        stream.<sup>(29)</sup><sup>(14)</sup>
  
- 1    2.    The chemical dispensing apparatus<sup>(10)</sup> of Claim 1 wherein said chemical reservoir<sup>(20)</sup>  
2        comprises a chemical storage container<sup>(24)</sup> and a chemical feed control.<sup>(26)</sup>
  
- 1    3.    The chemical dispensing apparatus<sup>(10)</sup> of Claim 2 wherein the chemical delivery<sup>(22)</sup>  
2        section comprises a chemical dispensing device<sup>(28)</sup> coupled to said chemical  
3        storage container<sup>(24)</sup> by a chemical supply conduit<sup>(27)</sup> through a chemical flow<sup>(30)</sup>  
4        control.
  
- 1    4.    The chemical dispensing apparatus<sup>(10)</sup> of Claim 3 wherein said chemical flow<sup>(30)</sup>  
2        control comprises a normally closed flow control valve selectively movable  
3        between an open position and a closed position coupled to said dispensing  
4        control section<sup>(18)</sup> by a conductor<sup>(32)</sup> to receive actuating signals therefrom to  
5        selectively move from said normally closed position to said open position to  
6        allow the chemical<sup>(29)</sup> to flow from said chemical storage container<sup>(24)</sup> to the air  
7        handler.<sup>(12)</sup>

- 1 5. The chemical dispensing apparatus of Claim 4 wherein said chemical feed <sup>(107)</sup> <sup>(20)</sup> <sup>(24)</sup> *dispensing*  
2 *control* comprises an atomizing nozzle coupled to the chemical storage  
3 container.
- 1 6. The chemical dispensing apparatus of Claim 4 wherein said chemical feed <sup>(107)</sup> <sup>(26)</sup>  
2 control is a check valve.
- 1 7. The chemical dispensing apparatus of Claim 6 further including a blower <sup>(107)</sup> <sup>(34)</sup>  
2 control to receive control or actuating signals to selectively actuate or  
3 energize a blower when chemical is dispensed from said chemical storage <sup>(567)</sup> <sup>(29)</sup> <sup>(24)</sup>  
4 container.
- 1 8. The chemical dispensing apparatus of Claim 7 wherein said blower control <sup>(107)</sup> <sup>(34)</sup>  
2 includes a transformer and blower control relay box.
- 1 9. The chemical dispensing apparatus of Claim 1 wherein said dispensing control <sup>(107)</sup> <sup>(18)</sup>  
2 section comprises a microprocessor control device including a display to <sup>(36)</sup> <sup>(38)</sup>  
3 provide a visual display of the system status.
- 1 10. The chemical dispensing apparatus of Claim 9 wherein said microprocessor <sup>(107)</sup> <sup>(36)</sup>  
2 control device controls the operating cycle by the frequency of application and  
3 duration of dispensing of the chemical.
- 1 11. The chemical dispensing apparatus of Claim 10 wherein said microprocessor <sup>(107)</sup> <sup>(36)</sup>  
2 control device includes an up control key and a down control key to selectively <sup>(44)</sup> <sup>(46)</sup>  
3 control said operating cycle.

- 1 12. The chemical dispensing apparatus of Claim 9 wherein said microprocessor  
2 control device monitors and records the operation of said chemical dispensing  
3 apparatus.
- 1 13. The chemical dispensing apparatus of Claim 9 wherein said microprocessor  
2 control device monitors consumption of chemical.
- 1 14. The chemical dispensing apparatus of Claim 13 wherein said microprocessor  
2 control devices monitors consumption of chemical through dispensing rate  
3 calculations.
- 1 15. The chemical dispensing apparatus of Claim 14 wherein said <sup>display</sup>displa includes a  
2 display of chemical in said reservoir.
- 1 16. The chemical dispensing apparatus of Claim 13 wherein said microprocessor  
2 control devices monitors consumption of chemical through a sensor.
- 1 17. The chemical dispensing apparatus of Claim 16 wherein said <sup>display</sup>displa includes a  
2 display of chemical in said reservoir.
- 1 18. The chemical dispensing apparatus of Claim 15 wherein the chemical may be  
2 manually dispensed by pressing a program mode key and then pressing a  
3 manual injection key.